Vocational personalities and mindfulness

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In the past few decades, many studies have been conducted on the positive effects of mindfulness, a state of openness to novelty in which an individual actively constructs categories and distinctions. The authors tested the applicability of Langer's (1989a) mindfulness theory to Holland's (1997) vocational personalities. Data from 156 Israeli full-time employees were collected. The results link different types of vocational personalities to a mindful mind-set.

Keywords: mindfulness, vocational personalities

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Historically, theoreticians and researchers in the field of psychology have focused primarily on how human adversity and psychological suffering can be diminished and prevented. However, in recent years, the focus has shifted to studying how happiness, growth, and meaning can be achieved (Seligman & Csikszentmihalyi, 2000). In this context, the concept of *mindfulness* has been of great interest (for a review, see Langer, 2009).

The literature on mindfulness consists of two distinct (albeit related) concepts. One concept is derived from contemplative, cultural, and philosophical traditions such as Buddhism and involves the cultivation of a moment-to-moment, nonjudgmental awareness of one's present experience (Kabat-Zinn, 1994; Marlatt & Kristeller, 1999). This concept of mindfulness is practiced mainly through formal and informal meditation. The second concept of mindfulness is derived from Western scientific literature and defined as a mind-set of openness to novelty in which the individual actively constructs categories and distinctions (Langer, 1978, 1989a, 1989b, 1992; Langer & Abelson, 1972). Our study focuses on the Western social-cognitive perspective of mindfulness. Both perspectives focus on the ongoing awareness of and attention to stimuli but diverge in considering what individuals do with these observations. Unlike the first concept of mindfulness in which one observes without judgment, Langer's conceptualization explicitly involves making deliberate cognitive categories, generating new distinctions, and adapting to changing situations (see Brown, Ryan, & Creswell, 2007, and Langer, 1989a, for a discussion of the overlap and distinctions between the two mindfulness concepts).

Western mindfulness encourages one to actively attend to changes and to create novel distinctions between phases of experiences (Langer, 2005). Desired results include context sensitivity, a heightened awareness of alternative perspectives, and

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engagement in the present moment. Its contrasting counterpart, mindlessness, is based in the past. It occurs when an individual becomes locked, either over time or immediately, into patterns of behavior and results in insensitivity to context and perspective. Mindlessness can lead to automatic reliance on preconceived categories that are no longer accessible to conscious consideration and rigid behavior that is governed, rather than guided, by rules (Langer, 2009).

Western mindfulness has been found to have desirable effects on numerous aspects of life. For example, mindfulness has been linked to greater relationship satisfaction (e.g., Burpee & Langer, 2005), better health (e.g., Alexander, Chandler, Langer, Newman, & Davies, 1989; Crum & Langer, 2007; Delizonna, Williams, & Langer, 2009; Langer & Rodin, 1976; Rodin & Langer, 1977), and increased longevity (e.g., Hsu, Chung, & Langer, 2010).

Western mindfulness has also been found to have desirable effects on aspects of work. For example, Langer's (1989a) conceptualization of mindfulness partially forms the basis of Weick, Sutcliffe, and Obstfeld's (1999) theorizing about collective mindfulness in high-reliability organizations. These authors, drawing on both Langer's (1989b) and Buddhism's mindfulness, addressed the challenge of characterizing labor organizations in terms of mindfulness and defined collective mindfulness as an organizational-level attribute that involves "a rich awareness of discriminatory detail and a capacity for action" (Weick et al., 1999, p. 88; see also Weick & Putnam, 2006). Collective mindfulness is construed as the result of a set of organizational processes aimed at observing, categorizing, and responding to unexpected events and errors, and is fundamental to high-reliability organizations (Weick et al., 1999). Recent work on collective mindfulness (Weick & Sutcliffe, 2007) has somewhat shifted the focus from organizational action capacities to organizational awareness. Mindful organizing helps the organization maintain resilience through anticipation and containment. However, high levels of organizational reliability are achieved through the actions of individuals. Our goal in the present article is not to link mindfulness to organizational functioning (Weick et al., 1999), but rather to explain individual differences in dispositional mindfulness or, more specifically, to explain how different vocational personalities might expose different levels of mindfulness.

Glomb, Duffy, Bono, and Yang (2011) confronted the challenge of examining the role of mindfulness in the workplace by means of a literature review and a qualitative study. They suggested three processes by which Eastern mindfulness might influence employees' functioning at work: First, mindfulness is associated with factors expected to influence relationship quality; second, mindfulness is linked to processes indicative of resilience; and third, mindfulness is linked with processes expected to improve task performance and decision making. Although, Glomb et al. recognized the high potential of mindfulness for several positive work outcomes, they noted that only a few studies directly tested mindfulness in work settings or with employee samples. We also did not find any study dealing with Western mindfulness at the employee level.

MINDFULNESS AND VOCATIONAL PERSONALITIES

Mindfulness can take the form of either a person characteristic (trait mindfulness) or a situation-specific characteristic (state mindfulness). As a person characteristic,

mindfulness has been measured in the context of individual differences (Pirson, Langer, Bodner, & Zilcha, 2012). Although some people are characterized by a tendency to seek and produce novel distinctions about present situations, others tend to react mindlessly through automatic reliance on preconceived categories. Mindfulness as an individual trait has been found to be related in theoretically predictable ways to the Big Five personality dimensions (McCrae & Costa, 1990) and other relevant personality constructs (Pirson et al., 2012). More specifically, as a trait (measured using the 14-item Langer Mindfulness Scale [LMS14; Pirson et al., 2012]), mindfulness was found to positively correlate with Extraversion, Conscientiousness, and Openness to Experience and to negatively correlate with Neuroticism (Pirson et al., 2012). Nonetheless, to the best of our knowledge, the relationship of mindfulness to vocational personalities (Holland, 1997) has never been examined, despite its apparent relevance to the workplace.

The most prevalent theory regarding vocational personalities belongs to Holland (1997). Holland's (1997) theory describes the nature or disposition of the individual worker using six basic personality-interest types—Realistic, Investigative, Artistic, Social, Enterprising, and Conventional—collectively referred to by the acronym RIASEC. An interest type is a theoretical organizer for understanding how individuals differ in their personality, interests, and behaviors. Types originate in heredity and in direct activities that yield interests and competencies; they are measured using interest items but are expressions of personality (Holland, 1997). Holland's (1997) theory classifies work environments where individuals function according to the same six basic RIASEC types. The interaction of certain types of individuals (and subtype combinations) with specific environments predicts and explains the work-related attitudes, behaviors, and interactions that occur in those environments.

The RIASEC typology has been widely studied in vocational literature and emerges repeatedly in large samples (Rounds & Tracey, 1993; Tracey & Rounds, 1993). Holland's (1997) theory describes the six personality types: Realistic types seek environments that allow them to work with tools, objects, or machines and tend to avoid environments that require extensive social interaction; Investigative types prefer settings in which they can observe and systematically examine physical, biological, or cultural phenomena and tend to avoid environments that require a good deal of persuasive activities; Artistic types prefer ambiguous, unstructured activities that allow them to create art from physical, verbal, or human materials and tend to avoid environments that require clerical and computational activities; Social types prefer working with others to teach, help them develop, or cure them and tend to avoid work with things such as machines; Enterprising types prefer persuasive and leadership roles and tend to avoid science; and Conventional types enjoy the systematic examination of data and tend to dislike environments that require ambiguous, unstructured activities (Spokane, Meir, & Catalano, 2000). Holland's RIASEC types have been found to be related in theoretically predictable ways to the Big Five personality dimensions. Specifically, Artistic and Investigative types have been found to correlate significantly with Openness, and Enterprising and Social types correlate significantly with Extraversion (for a meta-analysis, see Larson, Rottinghaus, & Borgen, 2002).

Both the RIASEC model (Holland, 1997) and Western mindfulness share variance with the Big Five personality scale (McCrae & Costa, 1990), although the RIASEC

model has practical implications for vocational choice and career counseling (Spokane et al., 2000), whereas Western mindfulness is a useful concept in social and cognitive psychology (Langer, 2009). To date, these models have been applied separately, with almost no crossover between them aside from a small number of studies investigating the relevance of Eastern mindfulness meditation to the workplace (Fries, 2009).

On a theoretical level, it may be argued that several of Holland's interest types (as described in Holland, Powell, & Fritzsche, 1994) may have mindful characteristics. Specifically, a mindful person is characterized by high levels of novelty seeking, novelty producing, context sensitivity, awareness of alternative perspectives, and engagement in the present moment, which are also important components of Holland's Realistic, Investigative, and Artistic vocational personality types. It could be speculated that the Realistic individual, a type who values freedom and intellect, is self-controlled and ambitious, and desires to invent apparatus or equipment, might be a mindful worker. The Investigative type is described as an intellectual, curious, open-minded person with broad interests and an inclination to invent valuable products or develop significant theoretical contributions. One may suggest that the qualities that characterize the Investigative personality type (e.g., the constant search for innovation and knowledge acquisition, scientific aptitudes and competencies) may make an individual a more mindful worker. The Artistic type is described as a curious, open-minded, nonconforming, imaginative, and sensitive person, who seeks novelty, creativity, and originality. It is reasonable to assume, then, that the Artistic type may also be regarded as having a mindful character. On the empirical level, regarding these three types, Ackerman and Heggestad (1997) concluded the following: Realistic, Investigative, and Artistic types showed negative correlations with harm avoidance, which might be considered the converse of caution, care, and attention; Investigative and Artistic types showed moderate to substantial correlations with openness and intellectual engagement; and Artistic types showed moderate negative correlations with traditionalism.

Our study examines the applicability of Langer's (1989a) mindfulness theory to the workplace by examining the relationship between mindfulness and vocational personalities. Because caution, care, attention, openness, intellectual engagement, and nonconformism are characteristics of Western mindfulness, we hypothesized that Realistic, Investigative, and Artistic vocational personality types would be related to high levels of mindfulness as a trait.

METHOD

Procedure

Data for the current study were collected from a community-based sample of full-time job holders in Israel. We used a snowball sampling method to recruit potential employed participants through e-mail and social networks. Research assistants of the first author distributed messages through Facebook posts. This method allowed us to obtain a heterogeneous sample representing a range of industries, positions, tenure periods, and occupations. The electronic message included a cover letter and a link

to an electronic survey. Participants who consented to participate voluntarily in the study completed a survey developed specifically for this study, which was available on a dedicated website (Google Docs). The initial wave of potential participants was asked to forward the e-mail to their acquaintances or to apprise their Facebook friends to follow the link that accessed the research website. Participants received no monetary compensation for their participation or cooperation in forwarding the questionnaire to potential respondents. Five weeks after we sent the initial e-mails, we obtained 156 usable surveys.

Participants

The sample comprised 156 participants, of whom 104 (66.7%) were male. All respondents held a full-time job (at least 40 hours per week) with tenure of at least 6 months ($M = 7.55$, $SD = 8.70$) in their current workplace. One third (33%) of the participants held a managerial position (Enterprising type) at the time of the study. The average age was 39 years ($SD = 11.92$), and ages ranged between 22 and 66 years. More than half (69.3%) of the sample population held a graduate degree. The sample showed an equal distribution of married (50.9%) and unmarried (49.1%, including divorced) individuals. Participants worked in diverse occupations: 34% were in service-related jobs (Social type); 14.4% were in high-tech and technical jobs (Realistic type); and 24.4% were in administration jobs (Conventional type). The remainder of the sample (27.2%) worked in other occupations (Artistic and Investigative types).

Measures

Mindfulness as a personal trait. We assessed mindful attention to variability using the LMS14 (Pirson et al., 2012). The LMS14 assesses three components of socio-cognitive mindfulness (novelty seeking, novelty producing, and engagement), which are measured by 14 items (e.g., "I try to think of new ways of doing things"). These items are scored using a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The analyses presented by Pirson et al. (2012) demonstrated that the scale was psychometrically valid, with three dimensions and strong internal consistency, which also allowed the use of one overall score. Using nine samples (including multisource and multiwave data) with a total of 4,345 responses, Pirson et al. replicated the scale across five separate samples, including an Israeli sample, which used a Hebrew version of the scale. The scale possessed both convergent and discriminant validity; criterion-related validity was demonstrated through the scale's association with psychological well-being, physical well-being, and social and organizational well-being. Findings suggest that the LMS14 has important implications for both individuals and organizations. In our study, the Cronbach's alpha of the LMS14 was .85.

Vocational personalities. We used the Hebrew version of the occupations section of Holland's (1985) Self-Directed Search (SDS) to measure Holland's RIASEC vocational personality types. Scores of 1 and 0 were assigned to *yes* and *no* responses,

respectively. We calculated the total score of each of the six SDS subscales (which reflected the six RIASEC interest preferences) for each participant. The internal consistency for the six SDS subscales in our study ranged from .70 to .89.

Control variables. We included gender as a control variable, because it has been reported to have a potential moderating role in vocational choices (Barrick, Mount, & Gupta, 2003).

RESULTS

Preliminary Analysis: Correlations With Demographics

We found significant gender differences in the Realistic type ($t = -5.13$, $p < .001$) and in mindfulness ($t = -2.56$, $p < .05$). Men scored higher ($M = 0.29$, $SD = 0.26$) than women ($M = 0.11$, $SD = 0.17$) in the Realistic type, which is consistent with previous studies (Murray & Hall, 2001), and in mindfulness (for men, $M = 5.78$, $SD = 0.84$; for women, $M = 5.40$, $SD = 0.81$). Therefore, we used gender (dummy coded: women = 0, men = 1) as a control variable when testing our hypothesis using hierarchical regressions.

Hypothesis Testing

The next set of analyses addressed the focal question of our investigation, namely, the role of vocational personality types in explaining mindfulness. As hypothesized, results revealed significant associations of mindfulness with Holland's Realistic, Investigative, and Artistic personality types ($r = .28$, $p < .01$; $r = .20$, $p < .05$; and $r = .21$, $p < .05$, respectively; see Table 1). It should be noted that despite not having hypothesized a relationship, we found a correlation of .16 (nonsignificant) between mindfulness and Holland's Enterprising type. Hierarchical regression analyses (in which trait mindfulness was regressed on gender as a control variable and the Realistic type as a predictor) yielded one simple effect for the Realistic type ($\beta = .24$,

TABLE 1

Pearson Correlations, Reliabilities, Means, and Standard Deviations for the LMS14 and the SDS Subscales

Variable	M	SD	1	2	3	4	5	6	7
1. LMS14	5.52	0.84	.76						
2. R	0.17	0.22	.28**	.83					
3. I	0.28	0.26	.20*	.53***	.86				
4. A	0.31	0.28	.21*	.28***	.27**	.88			
5. S	0.39	0.30	.04	.17*	.37***	.25*	.89		
6. E	0.28	0.21	.16	.30***	.07	.34***	.26**	.77	
7. C	0.16	0.21	.02	.25**	.38***	.09	.17*	.20*	.70

Note. Boldfaced values indicate alpha reliability coefficients. LMS14 = 14-item Langer Mindfulness Scale; SDS = Self-Directed Search; R = Realistic; I = Investigative; A = Artistic; S = Social; E = Enterprising; C = Conventional.
*$p < .05$. **$p < .01$. ***$p < .001$.

$t = 2.74$, $p < .01$), indicating that only the Realistic type, not gender, contributed to the explanation of mindfulness. Taken together, the results supported our hypothesis, which indicated that Realistic, Investigative, and Artistic personality types share variance with mindfulness.

We performed a stepwise regression to explain mindfulness by all three vocational personality types. We found that when all types were entered, only the Realistic type was significant ($\beta = .22$, $t = 2.30$, $p < .05$), indicating that the Realistic type may be the single vocational personality type with potential to predict trait mindfulness.

DISCUSSION

Our study proposes mindfulness as a new perspective for understanding the world of work. Specifically, the current study clarifies the relations between Langer's (1989a) mindfulness theory and Holland's (1997) RIASEC typology. Findings show that Realistic, Investigative, and Artistic vocational personalities are significantly associated with trait mindfulness. It should be noted that we also found a low nonsignificant relationship between mindfulness and Holland's Enterprising type. A larger and more heterogeneous sample may have yielded significance in this relationship. It seems that the Realistic, Investigative, and Artistic types, which are adjacent to each other on the hexagonal structure of vocational personality types, may share common factors distinguishing them from the remaining three vocational personality types. According to Holland (1997), their proximity reflects their psychological similarity in terms of traits, life goals, values, identifications, aptitudes, and competencies. The characteristics of these three personality types can be regarded as corresponding to features shared by mindful individuals: The Realistic type is associated with intellect and self-control, the Investigative type is associated with curiosity and openness, and the Artistic type is associated with creativity and curiosity. It is important to mention that the weak–moderate associations that were found can be attributed to the exploratory nature of this study, which is the first to suggest these theoretical associations. Therefore, more research is needed to establish these associations.

Our study is also the first to systematically examine the applicability of mindfulness theory (Langer, 2005, 2009) to the workplace. Our findings open a new avenue of research both in the field of mindfulness theory and in occupational psychology. An additional strength of our study is that it used a population of employed adults, rather than student samples, which are the basis for much of the existing data in these fields (e.g., Armstrong & Anthoney, 2009).

The results of our study represent only a preliminary step in the systematic analysis of the role of mindfulness in the workplace. Several limitations of our study should be addressed in future research. First, our study used a correlational design whereby participants were not randomly assigned to jobs; therefore, no causality can be inferred from these results. It would be interesting to extend the design of our study and examine the influence of the mindfulness mind-set on individuals over time. Future research on this issue may lead to important insight regarding the long-term effects of mindfulness on work meaning, commitment, and satisfaction.

Second, the assessment of mindfulness using a self-report measure might be challenged on the basis of possible response biases and shared-method variance among

the various self-report measures. For example, it is reasonable to assume that one's trait mindfulness influences the extent to which one views one's interests. It would be interesting for future research to examine objective measurements of mindfulness (e.g., external observers' report using a prepared checklist of mindful-work properties).

It would also be interesting to compare the predictive value of such objective measurements of mindfulness in the workplace with self-report scores. Such comparisons may help to reconcile whether objective or subjective perceptions of job mindfulness have a higher effect on work outcomes and actual employee effectiveness. Such comparisons could contribute to a more general theoretical discussion on the importance of objective versus subjective factors in predicting important elements in the workplace (for further elaboration of this discussion, see Lazarus, Cohen, Folkman, Kanner, & Schaefer 1980).

Finally, with regard to the external validity of our findings, our study included only full-time employees. It may be argued that people's mindfulness level can influence their job status. Therefore, future studies should examine whether the associations between trait mindfulness and vocational personalities can be generalized to more diverse populations (e.g., unemployed or part-time employees, who may be exposed to more variegated stimuli than those focused on one set of tasks). Future research should also extend the present findings to a larger spectrum of occupations. It would be interesting to examine whether an individual's mindfulness level influences his or her job choices. Other extensions of mindfulness research in the workplace could explore developmental issues (e.g., interaction of mindfulness with age or tenure in a particular work setting). For example, would long-term workers be less open to new stimuli than novice workers, or would mindfulness be expressed as a stable trait over the life span? Could the presence or lack of mindfulness reveal some clues about the dynamics of burnout? To what extent can mindfulness be taught, and can training produce an antidote to burnout, thereby contributing to the effectiveness and profitability of organizations? Does mindfulness moderate the benefits of person–environment fit among particular Holland (1997) personality-interest types?

In summary, our study explored the value of applying mindfulness theory to the workplace. Although there is still much to learn, the results of our study provide important insight into the applicability of mindfulness theory to the workplace, demonstrating that meaningful information related to the career choice process and vocational adjustment can be obtained from individuals' mindfulness levels. In our study, we demonstrated the relationships between Holland's (1997) vocational personalities (as measured by the six subscales of the SDS) and trait mindfulness (as measured by the LMS14). Additional research is needed, however, to further examine the role of mindfulness in the workplace and to better understand the psychological processes that underlie such effects.

PRACTICAL IMPLICATIONS

Identifying the relationships underlying the two domains—vocational personalities and mindfulness—conceptualized in Holland's (1997) and Langer's (1989a) theories has important practical and theoretical implications. More specifically, integrating

information across individual differences may enhance the understanding of how individuals function and adjust to their environments (Lubinski, 2000). Furthermore, from a practical point of view, the relations between trait mindfulness and Holland's (1997) RIASEC typology may be useful for working with clients in career counseling and other applied settings who are attempting to link their educational and career plans to their interests and specific mind-set. Interesting questions regarding how vocational personalities and mindful mind-sets interact in the career choice process emerged from our results. Our findings also highlight future research questions related to the development of integrated models of individual differences.

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